

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (Previously presented) A substrate processing apparatus, comprising:

a processing chamber;

a susceptor on which a substrate is to be placed; and

a heating unit disposed below said susceptor which heats said substrate placed on said susceptor, wherein

said susceptor and said heating unit are accommodated in said processing chamber,

said substrate is processed in a state in which said susceptor is rotated relative to said heating unit,

at least said susceptor is lifted and lowered in said processing chamber,

a lifting and lowering apparatus, disposed in said processing chamber, which lifts and lowers said substrate with respect to at least a portion of said susceptor, and

wherein, when said substrate is lifted or lowered, at least with respect to said portion of said susceptor, a distance between said susceptor and said heating unit is maintained constant.

2. (Previously presented) The substrate processing apparatus as recited in claim 1, wherein

said heating unit is lifted and lowered in said processing chamber, and

wherein said lifting and lowering apparatus lifts or lowers said substrate with respect to at least the portion of said susceptor in association with said lifting and lowering motion of said susceptor and said heating unit.

3. (Canceled)

4. (Previously presented) The substrate processing apparatus as recited in claim 1, wherein said lifting and lowering apparatus is disposed outside said susceptor.

5. (Previously presented) The substrate processing apparatus as recited in claim 1, wherein said lifting and lowering apparatus is disposed inside said susceptor.

6. (Previously presented) The substrate processing apparatus as recited in claim 1, wherein said susceptor comprises a central member and a peripheral member, and wherein said lifting and lowering apparatus lifts and lowers said central member of said susceptor.

7. (Previously presented) The substrate processing apparatus as recited in claim 6, further comprising:

a heater of said heating unit comprises a central heater member corresponding to said central member of said susceptor and a peripheral heater member corresponding to said peripheral member of said susceptor,

outputs of said central heater member and said peripheral heater member are independently controlled, and

wherein said output of said central heater member is increased while said central member of said susceptor is lifted or lowered.

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Previously Presented) A substrate processing apparatus, comprising:

a processing chamber;

a susceptor on which a substrate is to be placed; and

a heating unit disposed below said susceptor which heats said substrate placed on said susceptor, wherein

said susceptor and said heating unit are accommodated in said processing chamber,

said substrate is processed in a state in which said susceptor is rotated relative to said heating unit,

at least said susceptor is lifted and lowered in said processing chamber,

a lifting and lowering apparatus, disposed in said processing chamber, that lifts and lowers said substrate with respect to at least a portion of said susceptor,

wherein said lifting and lowering apparatus is adapted to move up or down according to lifting or lowering motion of said susceptor to lift and lower said substrate with respect to said portion of said susceptor,

wherein a lowering motion of said lifting and lowering apparatus is restricted when said lifting and lowering apparatus abuts an abutting position provided at a position of said processing chamber, and

wherein said abutting position is provided on a downside of an upper face of said heating unit and is not located between said heating unit and said susceptor.

14. (Previously presented) A substrate processing apparatus as recited in claim 13,

wherein said heating unit is lifted and lowered in said processing chamber, and

wherein said lifting and lowering apparatus lifts or lowers said substrate with respect to at least the portion of said susceptor in association with said lifting and lowering motion of said susceptor and said heating unit.

15. (Previously presented) A substrate processing apparatus as recited in claim 13, wherein, when said substrate is lifted or lowered, at least with respect to said portion of said susceptor, a distance between said susceptor and said heating unit is maintained constant.

16. (Previously presented) A substrate processing apparatus as recited in claim 13, wherein said lifting and lowering apparatus is disposed outside said susceptor.

17. (Previously presented) A substrate processing apparatus as recited in claim 13, wherein said lifting and lowering apparatus is disposed inside said susceptor.

18. (Previously presented) A substrate processing apparatus as recited in claim 13,

wherein said susceptor comprises a central member and a peripheral member, and

wherein said lifting and lowering apparatus lifts and lowers said central member of said susceptor.

19. (Previously presented) A substrate processing apparatus as recited in claim 13, further comprising:

a heater of said heating unit comprises a central heater member corresponding to said central member of said susceptor and a peripheral heater member corresponding to said peripheral member of said susceptor, and

wherein outputs of said central heater member and said peripheral heater member are independently controlled, and

wherein said output of said central heater member is increased while said central member of said susceptor is lifted or lowered.

20. (Previously presented) A substrate processing apparatus, comprising:
a processing chamber;
a susceptor unit including a susceptor on which a substrate is to be placed;

a heating unit disposed below said susceptor which heats said substrate placed on said susceptor; and

a gas blowout plate which supplies gas from above said substrate to the substantially entire surface of said substrate, wherein

said susceptor and said heating unit are accommodated in said processing chamber,

said heating unit and said susceptor unit rotate relative to each other,

said substrate is processed in a state in which said susceptor is rotated relative to said heating unit,

at least said susceptor is lifted and lowered in said processing chamber; and

a lifting and lowering apparatus, disposed in said processing chamber, which lifts and lowers said substrate with respect to at least a portion of said susceptor, and

wherein said lifting and lowering apparatus is disposed engaging both said heating unit and said susceptor unit.

21. (Currently amended) A substrate processing apparatus, comprising:
- a processing chamber;
- ~~a susceptor unit including~~ a susceptor on which a substrate is to be placed;
- a heating unit disposed below said susceptor which heats said substrate placed on said susceptor, and
- a gas blowout plate which supplies gas from above said substrate to the substantially entire surface of said substrate, wherein
- said susceptor and said heating unit are accommodated in said processing chamber,
- said substrate is processed in a state in which said susceptor is rotated relative to said heating unit,
- at least said susceptor is lifted and lowered in said processing chamber, and
- a lifting and lowering apparatus is disposed in said processing chamber which lifts and lowers said substrate with respect to at least a portion of said susceptor, and
- ~~said lifting and lowering apparatus is disposed engaging in both said heating unit and said susceptor unit.~~

22. (Previously presented) A substrate processing apparatus, comprising:
- a processing chamber;
- a susceptor on which a substrate is to be placed; and
- a heating unit disposed below said susceptor which heats said substrate placed on said susceptor, wherein
- said susceptor and said heating unit are accommodated in said processing chamber,
- said substrate is processed in a state in which said susceptor is rotated relative to said heating unit,

at least said susceptor is lifted and lowered in said processing chamber,

a lifting and lowering apparatus, disposed in said processing chamber, which lifts and lowers said substrate with respect to at least a portion of said susceptor, and

a gas introducing position, a substrate processing position, a gas exhaust position and a substrate transferring in and out position is disposed in this order from above.

23. (Cancelled)

24. (Previously presented) The substrate processing apparatus as recited in claim 18, further comprising:

a plurality of thermocouples for measuring a temperature of said substrate.

25. (Previously presented) The substrate processing apparatus as recited in Claim 20, wherein

said lifting and lowering apparatus comprises at least two members, and one of the two members engages in said susceptor and the other of the two members engages in said heating unit.